

# **CHAMPION FOR RADIOACTIVE WASTE DISPOSAL**

## **HOST OF THE WIPP: CARLSBAD, NEW MEXICO**

Norbert T. Rempe, WIPP

(slightly modified from the 1995 original, presented at the Fifth International Conference on Radioactive Waste Management and Environmental Remediation, ICEM '95, in Berlin, Germany)

### **ABSTRACT**

The city of Carlsbad, New Mexico, volunteered to host the United States' first final repository for radioactive waste. Carlsbad citizens and their leaders understood that after decades of accumulating waste, the time had come to close the nuclear cycle. They therefore agreed to support the Waste Isolation Pilot Plant (WIPP), provided the project would not endanger its neighbors or the environment. The southeastern New Mexico area offers several advantages for deep geologic waste disposal: The regional geology is well understood. Massive salt beds are an excellent repository medium. Decades of potash mining experience inspired confidence in the disposal concept. An underground nuclear test in the salt had caused no harm. And the city was seeking opportunities to diversify its economic base.

Through the growth of the project, beginning in 1971, Carlsbad has demonstrated unwavering commitment, patience, and persistence. Without these attitudes, the WIPP would certainly not be where it is today and most likely would not exist at all. Civic leaders made the critical difference as the project weathered repeated challenges. With the support of their constituents, they foiled anti-nuclear obstructionism and advanced the project at every turn, frequently on their own time and at their own expense. The WIPP started disposal operations on March 26, 1999, after a ten-year delay from its originally intended opening date. The credit for its success must in no small measure go to the city and the citizens of Carlsbad, New Mexico.

### **EARLY EFFORTS**

Planning for the long-term disposal of radioactive waste in the United States began in earnest in the mid - 1950s when the National Academy of Sciences (NAS) identified deep geologic disposal as a suitable method and recommended the study of salt deposits as the most promising repository medium(1). During the next 15 years the U.S. Atomic Energy Commission (AEC) sponsored research and development efforts to investigate specifically the feasibility of using bedded salt as host rock for a final repository. These studies gradually focused on the state of Kansas and resulted in the announcement on June 17, 1970, that the AEC had tentatively selected a site near Lyons in central Kansas "for an initial salt mine repository for the demonstration of long-term storage of solid high-level and long-lived low-level radioactive

wastes”(2). But by February 1972, the Lyons project was abandoned because of unresolved technical issues and in the face of strong regional political opposition.

## **WHY CARLSBAD ?**

Following from a distance the declining fortunes of the Lyons project, civic leaders in Carlsbad, New Mexico, became increasingly interested in the possibility of establishing the planned repository in the massive salt beds near their city. Potential Carlsbad advantages included a wealth of geologic information and mining experience, familiarity with nuclear issues, and a desire to expand and diversify the local economy.

### ***Geology/Mining***

The regional geology of southeastern New Mexico was already quite well understood by 1970. Carlsbad is located on the western edge of the Permian Basin, one of the most prolific oil and gas provinces in the U.S. The Permian Reef with its magnificent exposures in the Guadalupe Mountains southwest of town is prominently featured in just about every geology textbook in North America and continues to attract geologists from around the world. Numerous caves in the Guadalupe, prominent among them Carlsbad Caverns and the more recently discovered Lechuguilla Cave, contribute valuable clues to the geologic history of the region. Exploration for hydrocarbons led in 1925 to the discovery of rich potash deposits east of Carlsbad. By the mid-1960s, seven mines had been established that provide essentially all of the potash produced in the U.S. Sulfur deposits just south of the nearby Texas state line, discovered in 1967 and mined until a few years ago, round out the regional natural resource inventory.

### ***Nuclear***

Carlsbad became a direct participant in the nuclear age when on December 10, 1961, a fissile charge the equivalent of about 3000 tons TNT was detonated 361 m underground, 40 km southeast of the city. This shot known as Project GNOME was the first in a series called the PLOWSHARE Program. These nuclear detonations were designed to investigate civilian applications of nuclear explosives. The specific purpose of Project GNOME was “to obtain information on the characteristics of an underground nuclear detonation in a salt medium and to explore the feasibility of energy recovery, radioisotope recovery, and generated-neutron utilization”(3).

### ***Economic***

Carlsbad had been founded in 1888 on the promise of agriculture, sustained by irrigation from the Pecos River. Cattle and sheep ranching formed another mainstay of the economy. Bat guano fertilizer was mined intermittently from area caves for several decades. A tourism industry started with the establishment of nearby Carlsbad Caverns National Monument in 1923 and blossomed with its elevation in status to National Park in 1930. Oil was first discovered near the city in 1913, followed by potash in 1925. By the late 1960s, however, lower-cost Canadian potash imports had cut seriously into the profitability of the Carlsbad mines. When one of them closed in 1968, over 1000 employees, one-fourth of the total potash work force lost their jobs.

Civic leaders therefore searched for opportunities to diversify their economy away from the vagaries of world market commodity prices and from the seasonal variations of the tourist trade.

## **OPENING MOVES**

A factor that triggered the earliest Carlsbad interest in the project was an article in New Mexico's largest newspaper, the Albuquerque Journal. It reported on November 7, 1971, on "a small war brewing between the State of Kansas and the Atomic Energy Commission over an abandoned salt mine near the town of Lyons"(4). As a contingency measure, the paper wrote, "The commission is also exploring possible sites in Oklahoma, Texas and Louisiana"(4). State senator Joe Gant, who represented the Carlsbad area, read that article and wondered why New Mexico was not included in the list of states considered for potential alternative sites. He called Harold Runnels, U.S. Congressman from the southern district of New Mexico, who in turn contacted the AEC. Carlsbad leaders followed up by travelling to Washington, DC, in December to discuss their city's interest, qualifications, and advantages. Information exchanges with federal and state officials continued through the next few months, culminating on August 14, 1972, in an AEC news conference in Carlsbad. Frank Pittman, director of the AEC's Division of Waste Management and Transportation, announced that the Carlsbad area was now being considered as an alternative underground test site for the long-term disposal of radioactive waste.

## **STEADY SUPPORT**

To suggest the disposal of radioactive waste anywhere invites almost certain controversy. But Carlsbad political and business leaders supported the proposal with cautious enthusiasm from the beginning. Based on their discussions with AEC personnel and their own experience with Project GNOME ten years earlier, they believed it possible to prove that the Waste Isolation Pilot Plant (WIPP), as the project came to be known, would be safe. In return, they expected the government to make worker safety and environmental protection the top priority, to keep community leaders well informed, to provide opportunities for significant community input to major decisions, and to ensure that the project contributed to the social and economic well-being of its neighbors (5). Mayor Walter Gerrells became the prime booster of the project, with the energetic assistance of the city's Department of Development under its directors Bob Boyd and Eddie Lyon, the unwavering support of the Chamber of Commerce under its long-term manager Louis Whitlock, and the endorsement of the local labor unions. Ned Cantwell, editor of the town's newspaper, Carlsbad Current-Argus, pledged to keep an open mind on the issue. Local and regional media provided the main forum for transmitting information, airing the issues, and facilitating rigorous debate on all aspects of the WIPP. Emotions ran relatively high for a while in the 1970s but trailed off significantly in the 1980s(6). In late 1978, the Carlsbad Current-Argus published the response to a mail-in questionnaire, with those in favor of the WIPP outnumbering those opposed to it by a ratio of 3:1(7,8). Support by the overwhelming majority of Carlsbad area residents never weakened, in spite of frequent changes in project policy, scope, regulations, personnel, funding, and schedule. Mayor Gerrells expressed the general sentiment in 1979: "As long as the studies done by the scientific world, the environmental - impact statements, all the other data indicate no harm to the environment or the people, we'll support the project"(9). Carlsbad's backing and encouragement for the WIPP pulled the project through

several critical periods that might otherwise have led to its demise. Such episodes occurred in 1974, 1978, 1980, and through the late 1980s until the present.

## **A CLOSE CALL**

Curiously enough, organized opposition and anti-WIPP sentiment in published opinion increased with their distance from Carlsbad. Anti-nuclear advocacy groups sprang up in the northern, more populous part of the state. But those challenges never shook Carlsbad's determination. That determination was put to a decisive test in 1978(10). A representative from the northern part of the state introduced a resolution in the New Mexico legislature in the capital city of Santa Fe, calling for a referendum on banning all radioactive waste from the state. In the then prevailing climate of published opinion, such a referendum would likely have spelled the end for the project. Representative Jack Skinner from Carlsbad and his allies from the southern part of the state labored hard to defeat the measure, which subsequently failed by a narrow margin, 34:36. All through the next year, local and regional politicians concentrated on reversing the anti-WIPP attitude of their fellow legislators. They gained so much ground that during the next legislative session, four separate pro-WIPP bills were introduced. These were eventually consolidated into a committee substitute which then was passed by the House 58:0 and by the Senate 38:1. Thus, within just one year, the New Mexico legislature's record on the WIPP had rallied from 36:34 to 96:1.

## **ONE CRITICAL WEEKEND**

Large government projects face critical reevaluation during each annual budget cycle. If crucial support is lost, that may spell the end. The superconducting supercollider in Texas foundered in exactly that manner. But the WIPP survived similar challenges. One such challenge arose during the first Reagan administration (11). One Friday, Joe McGough, then Department of Energy (DOE) project manager for the WIPP, called Eddie Lyon, then director of the Carlsbad Department of Development. McGough had just been informed that David Stockman, Reagan's budget director, was all but ready to eliminate WIPP funds from next year's budget. McGough asked Lyon whether he had some way to contact the president, sway his mind, and save the WIPP allocation. Lyon went to work immediately. His best chance might be through Anderson Carter, former candidate for New Mexico governor, regional chairman for Reagan's election campaign, and long-time Republican Party powerbroker. But Carter no longer lived in the state, and Lyon did not have his current address. He therefore called during the weekend Don Kidd, president of the Western Commerce Bank in Carlsbad. Carter had been a member of the bank's board of directors. Kidd provided Carter's current phone number at his pecan farm near Wilcox, Arizona, and Lyon proceeded to call Carter with his request. Carter was willing to help but did not have direct access to the president; however, he did have the ear of Ed Meese, then chief of staff of the White House and one of the president's closest advisors. So Carter called Meese who promised that he would plead Carlsbad's cause before Reagan.

On Monday morning, McGough called Lyon with the good news: He had just been informed that the WIPP budget had been restored. Carlsbad had come through for the WIPP again, and the project survived another challenge.

## **PATRIOTIC REALISM**

Carlsbad is unique in being the first community worldwide that has actually volunteered to host a deep geologic repository for radioactive waste. Undoubtedly, socioeconomic motives played a part in the original decision to attract the project. And the same reasons also contribute to more recent community efforts to defend the WIPP against its detractors. But other communities face similar socioeconomic problems; yet there these pressures prove insufficient to overcome the so-called NIMBY (Not In My Back Yard) syndrome. Thus, socioeconomic motives cannot be the decisive ones. Instead, considerable evidence points to a sense of duty to country and civilization as the real motivator. That argument goes roughly as follows:

Western civilization may well have perished without the nuclear shield. The waste produced in the construction and maintenance of that shield needs to be managed in a safe and environmentally responsible manner. The generation that benefited from nuclear deterrence is morally obligated to clean up after itself, rather than leaving the job to its children and grandchildren. The Carlsbad area has the necessary natural resources and mining experience and can attract the required scientific, technical, and regulatory expertise to provide a permanent solution to the waste management issue. This “can do” attitude was perhaps best expressed by Carlsbad’s Chamber of Commerce Manager in 1972: “Surely, if we can send men to the moon, then we can certainly store something like this safely”(12).

If the overwhelming majority of Carlsbad area residents did not subscribe to the essence of this argument, their political representatives would be very unwise to support the project. They would probably join the majority of elected officials who, when faced with a controversial issue, instinctively react with the NIMTO (Not In My Term of Office) response. Instead, the politicians’ messages to Carlsbad read(13): “Your unfailing support over the years has served to protect your own health and safety, as well as that of all citizens of New Mexico.” - “I can’t say enough about your city leaders who have been unflinching in their support of WIPP.” - “I look forward to the day when I can return to Carlsbad for an official ceremony at the Waste Isolation Pilot Plant.”

## **CONCLUSIONS/LESSONS**

Carlsbad expected the WIPP to start disposing of waste in 1988. Non-technical obstacles prevented a timely opening and delayed the planned first waste receipt until early 1999. Carlsbad’s patience with the federal government has been tested many times and will likely continue to be tested. But if the past is any guide to the future, Carlsbad will patiently persist, and the WIPP will complete its mission. Administrations come and go, and the politics of the moment ebb and flow; but the need to manage the legacy of the Cold War will not soon disappear. Carlsbad not only realized that the nuclear cycle needs to be closed by giving the waste a safe final resting place, Carlsbad also drew from that theoretical realization the practical

conclusion that the salt beds nearby provide for an excellent site. The nation's best scientists and engineers and their critics have, during one quarter-century of intensive work, not come up with any "show stopper" to challenge that conclusion.

The slow but steady success of the WIPP serves as a lesson, especially when contrasted with the relatively quick failure of its predecessor. The legitimate technical concerns raised about the Lyons site did not by themselves constitute sufficient justification for its abandonment (14). The community was overwhelmingly in favor of the project. But in the end it failed because of a scare campaign fanned by a U.S. Congressman who did not even represent the Lyons area. Other politicians, notably the state's governor, eventually joined that campaign, sealing the project's fate. "We wouldn't have minded losing it on a scientific basis", the mayor of Lyons said, "but we are absolutely disgusted to have lost the facility on the basis of a scare campaign" (15). The lesson Carlsbad took from the Lyons experience was not to sit back and let outsiders with hidden agendas manipulate the project's fate. Carlsbad residents are also quite conscious of the fact that the WIPP will leave a legacy that will help or hinder other deep geologic disposal projects. They therefore patiently and persistently support and defend the WIPP on its merits. Carlsbad's attitude, strategy, and determined effort are the crucial elements of success.

## REFERENCES

1. NATIONAL ACADEMY OF SCIENCES - NATIONAL RESEARCH COUNCIL, "The Disposal of Radioactive Waste on Land," Publication 519, Washington, DC (September 1957).
2. UNITED STATES ATOMIC ENERGY COMMISSION, "Environmental Statement, Radioactive Waste Repository, Lyons, Kansas," WASH-1503, Washington, DC (June 1971).
3. I. GRAVITIS, S. ROHRER, C. MAAG, and R. SHEPANEK, "Projects GNOME and SEDAN - The PLOWSHARE Program," DNA 6029F, Defense Nuclear Agency, Washington, DC (March 1983).
4. UNITED PRESS INTERNATIONAL, "AEC, Kansas Battle Over Nuclear Dump Site," Albuquerque Journal, Albuquerque, NM (November 7, 1971).
5. D. KIDD, "Partnering with the Department of Energy: A Host Community's Perspective," in Proc. Int. Topical Mtg. on Nuclear and Hazardous Waste Management SPECTRUM '94, Atlanta, GA (August 14-18, 1994).
6. WASTE ISOLATION PILOT PLANT, "WIPP.... In The Beginning -The 1970s," Video, Carlsbad, NM (July 1992).
7. CARLSBAD CURRENT-ARGUS, "WIPP: How Do You Stand?," Carlsbad, NM (October 10, 1978).
8. IBID, "Results Favor WIPP 3 To 1." (October 22, 1978).
9. R. RHODES, "Waste of the Pecos," Playboy (August 1979).
10. SEE (6)
11. E. LYON, Personal Communication (1994).
12. SEE (7), "Atom Work Defended" (August 15, 1972).
13. IBID, "WIPP: A deep history, a rooted cause" (November 1, 1992).
14. REVIEW COMMITTEE, "Final Progress Report: Review of Plans by the Atomic Energy Commission for a Bedded Salt Pilot Plant in New Mexico-to the Governor's Committee for Technical Excellence," (August 1974)
15. See (7), "People of Lyons, Kansas, Wanted AEC Plant" (August 16, 1972).